--31. A process according to claim 24, wherein the reaction temperature is 650° - 800° for the hydrolysis of C_2F_6, 600° - 800°C for the hydrolysis of CF_4 and CHF_3, 700° - 800°C for the hydrolysis of C_3F_8, and 650° - 800°C for the hydrolysis of C_4F_8.--

REMARKS

Applicants request that the Examiner acknowledge receipt of two certified priority documents filed with the Response to Restriction Requirement on July 26, 1999. Enclosed is the mail room date stamped receipt indicating that the priority documents were filed in the Patent Office on July 26, 1999.

Applicants have canceled claims 1-23 without prejudice or disclaimer. New claims 24-31 have been added by the present Amendment. Accordingly, claims 24-31 are pending.

Claim 24, which is the only independent claim now pending, is directed to the combination of the invention that includes treating a fluorine compound containing gas by contacting a gas stream containing at least one of the claimed compounds with a catalyst containing at least aluminum and nickel as metallic components showing a higher decomposition activity in the presence of steam at a reaction temperature of 400° to 800°C.

Specifically, the claimed compounds of claim 24 include at least one of compounds of carbon and fluorine, compounds of carbon, hydrogen and fluorine, and compounds of carbon, hydrogen, oxygen and fluorine. According to the invention,

the fluorine of the fluorine compound containing gas is hydrolyzed to convert the fluorine to hydrogen fluoride. See page 5, lines 2-10; page 14, lines 8-12; page 30, lines 23-24 of the specification and Examples 6, 7, 9, 10 and 14 in support of new claim 24. In particular, the reaction temperature of 400° to 800° is supported by the description on page 8, lines 20-23 of the present specification.

With respect to claim 25, support for the catalyst containing at least composite oxides of aluminum and nickel can be found on page 9, line 23 to page 10, line 9. Claim 26 is supported by page 14, lines 8-12 of the specification.

Claim 27 is supported by the description on page 9, line 23 to page 10, line 9; and claim 28 is supported by the description on page 8, lines 12-15 of the present specification.

Claim 29, which specifies that the catalyst further comprises zinc as a metallic component, is supported by the description on page 14, lines 16-17 and Example 15 of the present specification. For support of claim 30, refer to page 9, line 23 to page 10, line 9 of the specification. Claim 31 is supported by original claim 18, for example.

As set forth in the Office Action, the Examiner has relied upon Lercher et al, U.S. Patent No. 5,710,359, Japan published Application No. JP3-249920 and Greene et al, U.S. Patent No. 5,414,201 in rejecting the invention as claimed. Present claims 24-31 are patentable over each of these

references and the remainder of the art of record for the following reasons.

Lercher et al disclose a process for the degradation of s-triazine or melamine-formaldehyde resins having C-X bonds where X is N; or compounds which have one or more C-X bonds, where X is selected from the group consisting of F, Cl, Br, I, O and X, by cleavage of the C-X bonds, in the presence of an aluminum catalyst.

Lercher et al is relied upon for disclosing the degradation of the chemical compounds as claimed, despite the rather limited disclosure of only the degradation of "s-triazine or melamine-formaldehyde resins". As disclosed in col. 1, lines 17-26 of Lercher et al, no environmentally appropriate disposal process of triazine compounds such as melamine-formaldehyde resins has been found, so a process is proposed which ensures environmentally appropriate and complete disposal for a multiplicity of different compounds having carbon-heteroatom bonds. (See col. 1, lines 37-40 of the reference.)

According to Lercher et al, since melamine-formaldehyde resins are degraded, various kinds of compounds having C-X bonds are produced, as exemplified in the patent description at col. 1, line 58 to col. 2, line 28. Thus, Lercher et al do not disclose or suggest the decomposition treatment of a gas containing fluorine compounds (such as C_2F_6, CF_4, etc.) as disclosed on page 1, lines 3-6 of the present specification,

for example. Further, according to Lercher et al, the catalyst used therein is an aluminum catalyst consisting essentially of catalytically active aluminum oxide or AlOOH as the active constituent. (See col. 3, lines 10-13 of the reference.)

As set forth by Applicants, when aluminum oxide alone, as taught by Lercher et al, is used (Catalyst 19, described on page 21, lines 5-17 of the present specification) for decomposition of C_2F_6, the decomposition rate is less than 50%, as shown in Fig. 6 (Example 6). In contrast, when catalysts 27 and 28 (Al_2O_3, NiO, see page 30, line 14 to page 31, line 9 of the present specification) are used, the decomposition rates are higher than 95%, as shown in Fig. 6 of the present application. Accordingly, the results of the present specification are not expected from the disclosure of Lercher et al, since alumina oxide alone does not show effective decomposition rates.

Greene discloses a process for the oxidation of halogenated organic compounds using a first catalyst and a second catalyst such as a metal-exchanged aluminosilicate zeolite. When zeolite is subjected to ion exchange, Ni and Al may coexist, but since the ion exchange is conducted while maintaining zeolite containing Al and Si, a catalyst containing Al and Ni as metallic components cannot be obtained. Also, although the organic compounds fluoromethane, difluoromethane, etc. are disclosed at col. 9, lines 24-29 of

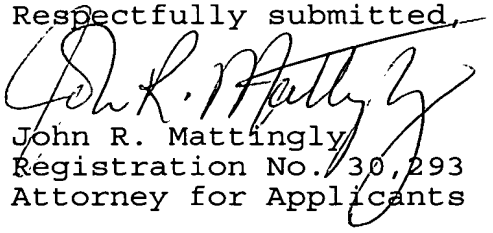
the reference, the reaction conducted on the catalyst is oxidation. In contrast, according to the claimed invention, hydrolysis is conducted, not oxidation.

The JP '920 reference was relied upon in the Office Action for disclosing a method for decomposing gaseous fluorocarbon, however the combination of JP '920 and Lercher et al does not render any of the pending claims obvious, and therefore each of the pending claims is patentable over the combination of Lercher et al, or any other reference of record, and JP '920.

In view of the foregoing amendments and remarks, reconsideration and reexamination are respectfully requested.

As required, Applicants submit herewith a Request for Approval of Proposed Drawing Corrections relating to the misspelling in Fig. 1. Also enclosed is a replacement sheet of the drawings in which the correction has been made, in accordance with current Patent Office practice.

Respectfully submitted,



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